ACTIVE PRIVACY SCREEN

FIELD

[0001] The application relates to active privacy screens.

BACKGROUND

[0002] People commonly view their device screens in public places and as a consequence, what they are viewing may also be seen by others.

SUMMARY

[0003] To prevent this, a privacy screen is provided for displays that actively adapts to the viewer's location. Such a narrower field of view provides more security against nearby people looking at the screen, even if their line of sight is close to the viewer's head. As the viewer moves his head in relation to the screen, the angle in which the privacy screen allows light to pass changes to match the new angle to the viewer's eyes. In this way the viewer does not perceive the image to fade as the viewer moves his head, while minimizing the chance that another person behind the viewer might see the image when the viewer's head is no longer blocking light from the display. Present principles are useful for times when a screen is displaying something that is only meant for the viewer, such as a business traveler working on a laptop computer, a commuter on a train reading private messages on their phone, or a security agent viewing a screen showing carry-on luggage screening images.

[0004] Accordingly, an apparatus includes at least one device screen and at least one blocking assembly juxtaposed with the screen and including at least one movable louvre configured to move to at least partially block the screen.

[0005] In example embodiments, the blocking assembly includes plural louvers. A first set of the louvers can be oriented perpendicular to a second set of the louvers. One or more louvers may be configured to tilt about an edge of the louver. The first set of louvers may be disposed in a first level and the second set of louvers may be disposed in a second level.

[0006] The louver can be positioned in front of the device screen. Or, the louver can be manufactured as part of the device screen.

[0007] In some implementations, louvers in the first set of louvers have a first length and louvers in the second set of louvers have a second length different from the first length. In examples, plural louvers that move in concert with each other. In other examples, plural louvers move independently of each other.

[0008] In an example embodiment a louver may include an upper panel and a lower panel parallel to the upper panel and slidably movable relative thereto.

[0009] In another aspect, a consumer electronics (CE) device includes at least one display screen, at least one camera, at least one louver assembly juxtaposed with the display screen, and at least one processor configured with instructions executable to present demanded images on the display screen. The instructions are further executable to move at least a first louver in the louver assembly at least in part based on at least one image from the camera.

[0010] In example embodiments the instructions can be executable to execute image recognition on the at least one image to identify a location of a user and move at least the first louver based on the location. The instructions may be executable to, based at least in part on the image recognition, activate at least one alarm indicating an eavesdropper. Example instructions further can be executable to, based at least in part on the image recognition, deenergize the display screen.

[0011] If desired, the instructions can be executable to actuate the louver assembly to direct a field of view (FOV) of light propagating away from the display screen at the location of the user.

[0012] In some implementations the instructions are executable to present at least one user interface (UI) configured to enable a user to enable and disable movement of the louver assembly.

[0013] In another aspect, a consumer electronics (CE) device includes at least one display screen and at least one louver assembly juxtaposed with the display screen with louvers that bound each of plural edges of at least a first pixel region of the display screen containing a first pixel. At least the first pixel of the first pixel region is movable relative to the louvers, or the louvers are movable relative to the first pixel, or both the first pixel and louvers are movable.

[0014] The details of the present application, both as to its structure and operation, can best be understood in reference to the accompanying drawings, in which like reference numerals refer to like parts, and in which:

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] FIG. **1** is a block diagram of an example system including an example in accordance with present principles;

[0016] FIG. **2** illustrates a first example embodiment of a blocking assembly with portions cut away;

[0017] FIG. **2**A illustrates an example embodiment of a moving mechanism coupled to a louver of the blocking assembly, with portions of the louver cut away;

[0018] FIG. **2**B illustrates a person looking at a device screen;

[0019] FIG. **3** illustrates two people viewing a device display screen with blocking assembly;

[0020] FIG. **4** illustrates a second example embodiment of a blocking assembly with portions cut away;

[0021] FIG. **5** illustrates a tilted example embodiment of a blocking assembly with portions cut away;

[0022] FIG. **6** illustrates another example embodiment of a blocking assembly with portions cut away;

[0023] FIG. **7** is a flow chart illustrating logic consistent with present principles;

[0024] FIG. **8** is a screen shot of an example user interface consistent with present principles;

[0025] and

[0026] FIGS. **9** and **10** illustrate an embodiment with movable light emitting elements.

DETAILED DESCRIPTION

[0027] This disclosure relates generally to aspects of consumer electronics (CE) devices with viewable display screens. A system herein may include server and client components, connected over a network such that data may be exchanged between the client and server components. The client components may include one or more computing devices including game consoles such as Sony PlayStation® or a game console made by Microsoft or Nintendo or other manufacturer virtual reality (VR) headsets, augmented real-